

(FILE 'HOME' ENTERED AT 16:45:27 ON 10 AUG 2000)

FILE 'BIOSIS, MEDLINE, EMBASE, EMBAL, SCISEARCH, BIOTECHDS, CAPLUS'
ENTERED AT 16:45:48 ON 10 AUG 2000

| | |
|----|---|
| L1 | 8261 S GENETIC()ALGORITHM? OR EVOL?()ALGORITHM? |
| L2 | 214 S L1 AND STRING? |
| L3 | 1 S L2 AND CONCAT? |
| L4 | 16 S L2 AND (NUCLEIC? OR DNS OR PEPTIDE? OR PROTEIN?) |
| L5 | 11 DUP REM L4 (5 DUPLICATES REMOVED) |

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1992:86858 CAPLUS

DOCUMENT NUMBER: 116:86858

TITLE: A multi-stage adaptive-coding **genetic algorithm** for design applications

AUTHOR(S): Szarkowicz, Donald S.

CORPORATE SOURCE: Dep. Data Process. Inf. Syst., Indiana Univ.
Northwest, Gary, IN, 46408, USA

SOURCE: Proc. Summer Comput. Simul. Conf. (1991), 23rd, 138-44

CODEN: PSCCD6; ISSN: 0094-7474

DOCUMENT TYPE: Journal

LANGUAGE: English

AB **Genetic algorithms** are increasingly applied to design optimization problems. Simple **genetic algorithms** encode their design variables into fixed-length bit- **strings** . The precision obtainable using this **concatenated** unsigned integer coding scheme is inherently limited.'a new hybrid **algorithm** is described which improves obtainable precision by combining a **genetic algorithm** with a systematic redn. of the search region. The resulting multi-stage adaptive-coding **genetic algorithm** is used to obtain near-optimal solns. to a pair of 21 variable brachistochrone problems.

TI A multi-stage adaptive-coding **genetic algorithm** for design applications

AB **Genetic algorithms** are increasingly applied to design optimization problems. Simple **genetic algorithms** encode their design variables into fixed-length bit- **strings** . The precision obtainable using this **concatenated** unsigned integer coding scheme is inherently limited.'a new hybrid **algorithm** is described which improves obtainable precision by combining a **genetic algorithm** with a systematic redn. of the search region. The resulting multi-stage adaptive-coding **genetic algorithm** is used to obtain near-optimal solns. to a pair of 21 variable brachistochrone problems.

ST **genetic algorithm** design optimization

IT Optimization
(of design, multistage adaptive-coding **genetic algorithm** for)

L5 ANSWER 1 OF 11 SCISEARCH COPYRIGHT 2000 ISI (R)

TI Locating critical points on multi-dimensional surfaces by **genetic algorithm** : test cases including normal and perturbed argon clusters

L5 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2000 ACS

TI Identifying satellites and periodic repetitions in biological sequences

L5 ANSWER 3 OF 11 MEDLINE

TI **Genetic algorithms** for **protein** threading.

L5 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2000 ACS

TI **Genetically evolved** receptor models (GERM) as a 3D QSAR tool

L5 ANSWER 5 OF 11 SCISEARCH COPYRIGHT 2000 ISI (R)

TI De novo design of the hydrophobic core of ubiquitin

=> d ti l5 6-11

L5 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2000 ACS

TI Multiple alignment of amino acid sequences using a **genetic algorithm**

L5 ANSWER 7 OF 11 MEDLINE

DUPLICATE 1

TI **Genetic algorithms** for **protein** structure prediction.

L5 ANSWER 8 OF 11 MEDLINE

TI A graph-topological approach to recognition of pattern and similarity in RNA secondary structures.

L5 ANSWER 9 OF 11 BIOSIS COPYRIGHT 2000 BIOSIS

DUPLICATE 2

TI A **genetic algorithm** -based protocol for docking ensembles of small ligands using experimental restraints.

L5 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2000 ACS

TI **Genetic algorithm** codings used in **protein** structure prediction by energy minimization

L5 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2000 ACS

TI A similarity measure for **DNA** sequence analysis based on locality

=> d ibib abs kwic l5 6, 11

L5 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1998:2346 CAPLUS

DOCUMENT NUMBER: 128:85617

TITLE: Multiple alignment of amino acid sequences using a

genetic algorithm

AUTHOR(S): Isokawa, Masamichi; Wayama, Masato; Shimizu, Toshio
CORPORATE SOURCE: Dep. Information Science, Fac. Sci., Hirosaki Univ.,
Hirosaki, Japan
SOURCE: Sci. Rep. Hirosaki Univ. (1997), 44(1), 125-140
CODEN: HUSRAK; ISSN: 0367-6439
PUBLISHER: Hirosaki University, Faculty of Science
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB We applied a **genetic algorithm** to the problem of multiple alignment of amino acid sequences based on Goldbergs simple **genetic algorithm**. A sequence including a gaps in an alignment is represented as a bit **string** which consists of '0' and '1'. In this bit **string**, '1' corresponds to a gap, with the total no. of '0' being exactly the same as the sequence length. The alignment is expressed with a matrix, which is a vertical arrangement of the bit **strings**. Bit matrixes are prepd. as a starting population in a random way: an element in each bit matrix is randomly detd. to be '0' or '1'. The next population is generated by applying three kinds of **genetic** operations: crossover, mutation and reprodn. The reprodn. operation creates the next population from the matrixes of the starting population with the use of the ranking selection and the similarity scores between amino acids. Next, a window-frame crossover operation exchanges the information partly between two parent matrixes selected randomly to produce two child matrixes: the amino acid residue correspondes are conserved strictly in this operation. Then, 4 mutation operations ("continuous-gap-shift mutation", "continuous-gap-extension mutation", "gap-block-extension mutation" and "gap-block-shift mutation") are applied to bit matrixes of the second population. These procedures described above are carried out repeatedly to obtain a nearly optimal alignment. We prepd. two test data sets of 4 and 5 amino acid sequences from the data base of SWISS-PROT release 30. The amino acid sequences of each data set were aligned with the procedure described above. Nearly optimal alignments are obtained by our method. The alignment results are comparable to those by CIUSTAL W which is the typical software package for multiple sequence alignment base on the tree-based **algorithm**.

TI Multiple alignment of amino acid sequences using a **genetic algorithm**

AB We applied a **genetic algorithm** to the problem of multiple alignment of amino acid sequences based on Goldbergs simple **genetic algorithm**. A sequence including a gaps in an alignment is represented as a bit **string** which consists of '0' and '1'. In this bit **string**, '1' corresponds to a gap, with the total no. of '0' being exactly the same as the sequence length. The alignment is expressed with a matrix, which is a vertical arrangement of the bit **strings**. Bit matrixes are prepd. as a starting

population in a random way: an element in each bit matrix is randomly detd. to be '0' or '1'. The next population is generated by applying three kinds of **genetic** operations: crossover, mutation and reprodn. The reprodn. operation creates the next population from the matrixes of the starting population with the use of the ranking selection and the similarity scores between amino acids. Next, a window-frame crossover operation exchanges the information partly between two parent matrixes selected randomly to produce two child matrixes: the amino acid residue correspondes are conserved strictly in this operation. Then, 4 mutation operations ("continuous-gap-shift mutation", "continuous-gap-extension mutation", "gap-block-extension mutation" and "gap-block-shift mutation") are applied to bit matrixes of the second population. These procedures described above are carried out repeatedly to obtain a nearly optimal alignment. We prepd. two test data sets of 4 and 5 amino acid sequences from the data base of SWISS-PROT release 30. The amino acid sequences of each data set were aligned with the procedure described above. Nearly optimal alignments are obtained by our method. The alignment results are comparable to those by CLUSTAL W which is the typical software package for multiple sequence alignment base on the tree-based **algorithm**.

ST **protein** amino acid sequence alignment **algorithm**

IT **Protein** sequences

(alignment; multiple alignment of amino acid sequences using a **genetic algorithm**)

IT **Algorithm**

Crossing over (**genetic**)

Mutation

Protein sequences

(multiple alignment of amino acid sequences using a **genetic algorithm**)

IT Genes

Proteins (specific **proteins** and subclasses)

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(multiple alignment of amino acid sequences using a **genetic algorithm**)

L5 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2000 ACS

ACCESSION NUMBER: 1995:10678 CAPLUS

DOCUMENT NUMBER: 122:2022

TITLE: A similarity measure for **DNA** sequence analysis based on locality

AUTHOR(S): Yokomori, Takashi; Kobayashi, Satoshi

CORPORATE SOURCE: Dep. Comput. Sci. and Inf. Math., Univ. Electro-Communications, Chofu, 182, Japan

SOURCE: Genome Inf. Ser. (1993), 4(GENOME INFORMATICS

WORKSHOP IV), 283-92

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We propose a simple **string** similarity measure and apply it to the problem of **DNA** sequence anal., more specifically, to the problem of analyzing mol. **evolution**. This measure is based on a "local feature" that was motivated from a theor. characterization on **DNA** splicing sequences. We demonstrate the usefulness of the proposed measure by presenting an exptl. result which concerns **evolutionary** mol. anal. This sheds new light on the other types of **DNA** sequence anal. such as **protein** classification, motif identification.

AB We propose a simple **string** similarity measure and apply it to the problem of **DNA** sequence anal., more specifically, to the problem of analyzing mol. **evolution**. This measure is based on a "local feature" that was motivated from a theor. characterization on **DNA** splicing sequences. We demonstrate the usefulness of the proposed measure by presenting an exptl. result which concerns **evolutionary** mol. anal. This sheds new light on the other types of **DNA** sequence anal. such as **protein** classification, motif identification.

ST sequence **DNA** **protein** similarity **evolution**
algorithm

IT **Algorithm**

Evolution

(similarity comparison of **DNA** and **protein** sequences based on locality)

IT **Protein** sequences

(similarity comparison of **protein** sequences based on locality)

WEST**Freeform Search****Database:**

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|--------------------------|--|------------------|-----------------|
| USPT | 13 | 24 | <u>L6</u> |
| USPT | 14 | 2 | <u>L5</u> |
| USPT,JPAB,EPAB,DWPI,TDBD | 13 and (nucleic or dna or (amino adj1 acid\$1)) | 2 | <u>L4</u> |
| USPT,JPAB,EPAB,DWPI,TDBD | 12 and concatenat\$3 | 24 | <u>L3</u> |
| USPT,JPAB,EPAB,DWPI,TDBD | 11 and string\$1 | 227 | <u>L2</u> |
| USPT,JPAB,EPAB,DWPI,TDBD | (genetic adj1 algorithm\$1) or (evolution\$3 adj1 algorithm\$1) | 946 | <u>L1</u> |

WEST[Generate Collection](#)**Search Results - Record(s) 1 through 2 of 2 returned.**☐ 1. Document ID: US 5886902 A

L5: Entry 1 of 2

File: USPT

Mar 23, 1999

US-PAT-NO: 5886902

DOCUMENT-IDENTIFIER: US 5886902 A

TITLE: Method for optimizing items represented in permutation spaces

DATE-ISSUED: March 23, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------|-----------|-------|----------|---------|
| Turrini, Silvio | Palo Alto | CA | N/A | N/A |

US-CL-CURRENT: 703/2; 345/154, 345/427, 382/276, 382/277, 382/280, 708/400, 708/401, 708/402, 708/520, 708/607

ABSTRACT:

In a computer implemented method, possible arrangements of items, such as components to be placed on a semiconductor die, are described in a permutation space expressed as a data structure stored in a memory. The data structure is in the form of a balanced tree. In the tree, each node is a possible permutation. The ordering in the permutation space is transformed to an ordering described in a vector space using an inversion table. A best ordering of items is determined in the vector space according to a predetermined criterion such as an objective function. The best ordering as determined in vector space is then transformed back to the permutation space to determine an optimal placement of the item according to the predetermined criterion.

12 Claims, 17 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 12

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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☐ 2. Document ID: US 5699268 A

L5: Entry 2 of 2

File: USPT

Dec 16, 1997

US-PAT-NO: 5699268
DOCUMENT-IDENTIFIER: US 5699268 A

TITLE: Computational method for designing chemical structures having common functional characteristics

DATE-ISSUED: December 16, 1997

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|-------|-------|----------|---------|
| Schmidt; Jonathan M. | Elora | N/A | N/A | CAX |

US-CL-CURRENT: 702/27; 703/11, 703/2

ABSTRACT:

The present invention relates to computational methods for designing chemical structures sharing common useful, functional properties based on specific combinations of steric configuration and binding affinity. More particularly the present invention provides a method for producing computer-simulated receptors which functionally mimic biological receptors. The simulated receptors are designed to exhibit optimized selective affinity for known target molecules. Chemical structures are then generated and evolved to exhibit selective affinity for the simulated receptors.

52 Claims, 6 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 4

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | FIGS | Draw Desc | Image |
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WEST**Generate Collection****Search Results - Record(s) 1 through 10 of 24 returned.**☐ **1. Document ID: US 6081620 A**

L6: Entry 1 of 24

File: USPT

Jun 27, 2000

US-PAT-NO: 6081620

DOCUMENT-IDENTIFIER: US 6081620 A

TITLE: System and method for pattern recognition

DATE-ISSUED: June 27, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|----------|-------|----------|---------|
| Anderholm; Eric J | LaCrosse | WI | N/A | N/A |

US-CL-CURRENT: 382/194; 382/181, 382/192

ABSTRACT:

A method for recognizing patterns comprising extracting features from a digital image, generating a numerical representation of each feature, indexing into a look-up table using the numerical representation to determine candidate pattern-types wherein the look-up table was generated by using a number of sample patterns to generate additional patterns based on relationships between the sample patterns; and selecting among the candidate pattern-types using selected contextual information. Extracting features from a digital image comprises identifying line segments in the digital image, grouping together adjacent line segments of the image that form features, storing the coordinates of the features to a file, the coordinates of the feature define a portion of the digital image containing the feature, dividing the portion of the digital image containing the feature into a number of cells, the number of cells is less than the number of pixels in each feature. Generating a numerical representation of each feature comprises generating a count of the number of pixels that are set in each cell, assigning a value to each cell based on whether the count for the cell exceeds a threshold, and indexing into a look-up table using the numerical representations to determine candidate pattern-types for the features wherein the look-up table was generated by using a number of sample patterns and at least one transformer that generates patterns by applying the transformer to the sample patterns; to select among the candidate pattern-types with selected validation modules that determine the pattern-type of each feature.

19 Claims, 44 Drawing figures Exemplary Claim Number: 10

Number of Drawing Sheets: 36

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|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
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☐ **2. Document ID: US 6070805 A**

L6: Entry 2 of 24

File: USPT

Jun 6, 2000

US-PAT-NO: 6070805

DOCUMENT-IDENTIFIER: US 6070805 A

TITLE: Distortion resistant double-data correcting color transition barcode and method of generating and using same

DATE-ISSUED: June 6, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|--------------|-------|----------|---------|
| Kaufman; Jeffrey R. | Vernon Hills | IL | N/A | N/A |
| Hohberger; Clive | Gurnee | IL | N/A | N/A |

US-CL-CURRENT: 235/494; 235/462.04, 235/469

ABSTRACT:

A color barcode symbology is disclosed that can be accurately decoded despite severe distortions, misreads or altered symbols. This disclosed barcode is a color transition barcode having linear growth properties designed to resist the single or combined effects of: scaling distortions, perspective distortions, shear distortions, and wave distortions of both the uniform and non-uniform type distributed across the barcode's vertical or horizontal axis. This color barcode symbology is also resistant to missing symbols and altered symbols while offering, high security, error checking, and double error correcting capability.

40 Claims, 34 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 22

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
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☐ 3. Document ID: US 6065219 A

L6: Entry 3 of 24

File: USPT

May 23, 2000

US-PAT-NO: 6065219

DOCUMENT-IDENTIFIER: US 6065219 A

TITLE: Method and apparatus for determining the shape of an earth borehole and the motion of a tool within the borehole

DATE-ISSUED: May 23, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------------|----------|-------|----------|---------|
| Murphey; Carey R. | Bellaire | TX | N/A | N/A |
| Varsamis; Georgios L. | Houston | TX | N/A | N/A |
| Wisniewski; Laurence T. | Houston | TX | N/A | N/A |
| Chen; Chen-Kang David | Houston | TX | N/A | N/A |

US-CL-CURRENT: 33/544; 33/302, 33/304

ABSTRACT:

A method and apparatus are provided for estimating the cross-sectional shape and orientation of an earth borehole and the motion of a tool therein. The method and apparatus involve measuring the distance from the tool to the borehole wall at a plurality of locations around the periphery of the tool and fitting those measured distances to a predetermined shape function using a nonlinear parameter estimation technique to minimize the error between the estimated shape of the borehole and the measured distances. The method and apparatus may be used to estimate elliptical and higher order borehole shapes. Additionally, the method and apparatus may be used while drilling the borehole.

81 Claims, 13 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 6

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
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☐ 4. Document ID: US 6052082 A

L6: Entry 4 of 24

File: USPT

Apr 18, 2000

US-PAT-NO: 6052082

DOCUMENT-IDENTIFIER: US 6052082 A

TITLE: Method for determining a value for the phase integer ambiguity and a computerized device and system using such a method

DATE-ISSUED: April 18, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------|-------------|-------|----------|---------|
| Hassan; Azmi | Johor Bharu | N/A | N/A | MYX |
| Mezera; David | Madison | WI | N/A | N/A |

US-CL-CURRENT: 342/357_04

ABSTRACT:

A method for determining a value for an integer number of phases using a computerized device, having steps: (a) providing an initial set comprising a plurality of coded integer ambiguity strings; (b) based upon a computed fitness value for each string in the initial set, choosing a selected plurality of integer ambiguity strings; and, (c) using information components from at least a first and second string of this selected plurality, generating a first and second offspring ambiguity string for evaluation. Additional steps: prior to choosing, calculating a probability of selection in connection with each computed fitness value; and generating additional offspring ambiguity strings for which fitness values can be computed. An optimal determination of the value can be used for determination of a position. The method of the invention can be incorporated into a global positioning system (GPS). Also, a computerized device for receiving a signal transmitted from a distant source (device has a processor for determining a value for an integer number of phases.). And a system for determining a position having a source for transmitting a signal wave and a computerized device, located a distance from the source.

20 Claims, 4 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 4

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| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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☐ 5. Document ID: US 6031935 A

L6: Entry 5 of 24

File: USPT

Feb 29, 2000

US-PAT-NO: 6031935
DOCUMENT-IDENTIFIER: US 6031935 A

TITLE: Method and apparatus for segmenting images using constant-time
deformable contours

DATE-ISSUED: February 29, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|-----------|-------|----------|---------|
| Kimmel; Zebadiah M. | Champaign | IL | 61820 | N/A |

US-CL-CURRENT: 382/173; 382/170, 382/199, 382/203, 382/286, 382/288

ABSTRACT:

An image segmentation system uses deformable contours to automatically identify the border of a target object in each image of a set of images. The majority of contour deformations, or moves, are performed in $O(1)$ time. Each contour uses both global and local geometric information and pixel intensity information extracted from a training contour, as well as a priori domain knowledge, to find the outline of the target object.

24 Claims, 22 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 22

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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☐ 6. Document ID: US 6029195 A

L6: Entry 6 of 24

File: USPT

Feb 22, 2000

US-PAT-NO: 6029195
DOCUMENT-IDENTIFIER: US 6029195 A

TITLE: System for customized electronic identification of desirable objects

DATE-ISSUED: February 22, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|-------|-------|----------|---------|
| Herz; Frederick S. M. | Davis | WV | 26260 | N/A |

US-CL-CURRENT: 709/219; 348/1, 455/2, 707/10

ABSTRACT:

This invention relates to customized electronic identification of desirable objects, such as news articles, in an electronic media environment, and in particular to a system that automatically constructs both a "target profile" for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a "target profile interest summary" for each user, which target profile interest summary describes the user's interest level in various types of target objects. The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user so that the user can select from among these potentially relevant target objects, which were automatically selected by this system from the plethora of target objects that are profiled on the electronic media. Users' target profile interest summaries can be used to efficiently organize the distribution of information in a large scale system consisting of many users interconnected by means of a communication network. Additionally, a cryptographically-based pseudonym proxy server is provided to ensure the privacy of a user's target profile interest summary, by giving the user control over the ability of third parties to access this summary and to identify or contact the user.

15 Claims, 17 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 13

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | RMC | Draw Desc | Image |
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☐ 7. Document ID: US 6021220 A

L6: Entry 7 of 24

File: USPT

Feb 1, 2000

US-PAT-NO: 6021220

DOCUMENT-IDENTIFIER: US 6021220 A

TITLE: System and method for pattern recognition

DATE-ISSUED: February 1, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|----------|-------|----------|---------|
| Anderholm; Eric J | LaCrosse | WI | N/A | N/A |

US-CL-CURRENT: 382/194; 382/224, 382/228

ABSTRACT:

A method and system includes a method for generating a classifier from a set of collected sample patterns for use in pattern recognition. The sample patterns are representative of data to be processed by the classifier and are converted to electronic signals to be manipulated by a programmed computer. Further, the method and system generate and identify a number of transformers that map between sample patterns of the same pattern-type in the collected sample patterns. The method and system use the transformers and the sample patterns to generate additional patterns. The method and system then forms a table that contains the generated patterns and an indication of the pattern-type to which each pattern belongs. The process repeats the steps of generating additional patterns and forming a table until a measure accuracy for the mapping of the sample patterns and transformers do not provide an acceptable improvement.

16 Claims, 44 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 37

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMMC | Draw Desc | Image |
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☐ 8. Document ID: US 6011847 A

L6: Entry 8 of 24

File: USPT

Jan 4, 2000

US-PAT-NO: 6011847
DOCUMENT-IDENTIFIER: US 6011847 A

TITLE: Cryptographic access and labeling system

DATE-ISSUED: January 4, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------------|----------|-------|----------|---------|
| Follendore, III; Roy D. | Manassas | VA | 20112 | N/A |

US-CL-CURRENT: 713/160; 380/262, 380/277, 713/165, 713/183

ABSTRACT:

An integrated, modular computer program system provides for the encryption and decryption of files utilizing conventional encryption algorithms and a relational key generated by the system. The computer program system also generates a series of labels that are encrypted and appended as a trailer to the encrypted message. The encrypted labels provide a history behind the particular encryption and they can be individually selected, separated, and decrypted from the total file. A rule based expert system is utilized as an intelligent label selection system to minimize message sensitivity. An access control module permits a user with a preassigned passphrase to have access to the encryption or decryption portion of the program by comparing a generated vector or key with a partially decrypted version of a second vector or key stored on a portable storage medium such as a floppy disk. If successful, the access control module creates a main key that is then used throughout the remainder of the program to encrypt or decrypt the labels. Part of the encryption or decryption process utilizes an internal, reproducible, but not reversible scrambling subroutine in which the bytes of an initializing vector are successively Exclusive ORed with one another and then the result concatenated to the initializing vector until all of the bytes have been so treated, and then the process repeated an integral number of times depending upon an input variable called a spinup number.

8 Claims, 28 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 25

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMC | Draw Desc | Image |
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☐ 9. Document ID: US 5956737 A

L6: Entry 9 of 24

File: USPT

Sep 21, 1999

US-PAT-NO: 5956737
DOCUMENT-IDENTIFIER: US 5956737 A

TITLE: Design engine for fitting content to a medium

DATE-ISSUED: September 21, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|-------------------|-------|----------|---------|
| King; Joseph D. | Seattle | WA | N/A | N/A |
| von Limbach; Geoffrey | Seattle | WA | N/A | N/A |
| McDonald; Marc B. | Mercer Island | WA | N/A | N/A |
| Orr; Michael B. | Bainbridge Island | WA | N/A | N/A |
| Weil; Steven E. | Bellevue | WA | N/A | N/A |

US-CL-CURRENT: 707/517

ABSTRACT:

A method of fitting content elements of a composition to a media layout is disclosed. Each content element has an associated content type, and the media layout has a content rendering space for presenting information contained in the content elements. For each content type, a content scale factor is initialized and extent values are computed. If the content elements do not fit within the media layout, then non-fit factors are determined, the scale factors and extent values are recomputed and these steps are repeated until the content fits. Another method computes a layout of a composition in a recursive fashion using a design tree. Design children components of a current component in the design tree are identified, and new media components between the current component and the identified design children components are created. A media division for each media component indicates a portion of the layout for each media component. Another method computes a layout of a composition for a chosen medium. The composition is represented in a media tree that has components, each associated with a media region of the chosen medium. The method steps down through the media tree of the composition and assigns tentative media regions to each of the components. The extent of each of the components is measured to return a set of values indicating a media region of the medium that is required by each of the components. Finally, the method steps up through the media tree of the composition and assigns new media regions to each of the components.

14 Claims, 71 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 47

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | RWC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|

☐ 10. Document ID: US 5924048 A

L6: Entry 10 of 24

File: USPT

Jul 13, 1999

US-PAT-NO: 5924048

DOCUMENT-IDENTIFIER: US 5924048 A

TITLE: Automated material balance system for hydrocarbon reservoirs using a genetic procedure

DATE-ISSUED: July 13, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------------|------------|-------|----------|---------|
| McCormack; Michael D. | Plano | TX | 75075 | N/A |
| MacAllister; Donald J. | Carrollton | TX | 75007 | N/A |
| Stoisits; Richard F. | Plano | TX | 75023 | N/A |
| Scherer; Perry W. | Harrison | NY | 10528 | N/A |
| Ma; Tuan D. | Anchorage | AL | 99516 | N/A |

US-CL-CURRENT: 702/13

ABSTRACT:

A system for producing a material balance solution for well patterns in a hydrocarbon reservoir is described that automatically optimizes the fluid allocation factors for each well used in determining the solution. The system automatically optimizes estimates for the allocation factors to be used in the material balance solution by randomly generating a first generation of allocation factor strings, each string in the generation assigning allocation factors to each of the wells in the reservoir. A fitness function value is determined for each of the strings by evaluating a fitness function, wherein the fitness function comprises the sum of the differences between computed and measured field pressures for each pattern, and the sum of the differences between target allocation factors and the allocation factors specified within the string for each well. A succeeding generation of allocation factor strings is produced according to a genetic algorithm. The process of determining a fitness function value for each of the strings is then repeated for the succeeding generation. The string having a fitness function value meeting a specified criteria is identified, wherein the identified string represents the optimized estimates of the allocation factors for the reservoir for use in determining the material balance solution.

21 Claims, 10 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 5

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | FIGS | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

Generate Collection

| Terms | Documents |
|-------|-----------|
| 13 | 24 |

Display

10

Documents, starting with Document:

11

Display Format:

REV

Change Format

WEST**Generate Collection****Search Results - Record(s) 11 through 20 of 24 returned.**☐ **11. Document ID: US 5907704 A**

L6: Entry 11 of 24

File: USPT

May 25, 1999

US-PAT-NO: 5907704

DOCUMENT-IDENTIFIER: US 5907704 A

TITLE: Hierarchical encapsulation of instantiated objects in a multimedia authoring system including internet accessible objects

DATE-ISSUED: May 25, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|---------------|-------|----------|---------|
| Gudmundson; Norman K. | Half Moon Bay | CA | N/A | N/A |
| MacInnis; Bo Yu | San Carlos | CA | N/A | N/A |

US-CL-CURRENT: 717/1

ABSTRACT:

An application development system, optimized for authoring multimedia titles, enables its users to create selectively reusable object containers merely by defining links among instantiated objects. Employing a technique known as Hierarchical Encapsulation, the system automatically isolates the external dependencies of the object containers created by its users, thereby facilitating reusability of object containers and the objects they contain in other container environments. Authors create two basic types of objects: Elements, which are the key actors within an application, and Modifiers, which modify an Element's characteristics. The object containers (Elements and Behaviors--i.e., Modifier containers) created by authors spawn hierarchies of objects, including the Structural Hierarchy of Elements within Elements, and the Behavioral Hierarchy, within an Element, of Behaviors (and other Modifiers) within Behaviors. Through the technique known as Hierarchical Message Broadcasting, objects automatically receive messages sent to their object container. Hierarchical Message Broadcasting may be used advantageously for sending messages between object containers that may be located remotely from each other, such as over a Local Area Network or the Internet. Even whole object containers may be transmitted and remotely recreated over the network. Furthermore, the system may be embedded within a page of the World-Wide Web.

5 Claims, 87 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 55

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | RWC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|

☐ **12. Document ID: US 5903902 A**

L6: Entry 12 of 24

File: USPT

May 11, 1999

US-PAT-NO: 5903902
DOCUMENT-IDENTIFIER: US 5903902 A

TITLE: Design engine with tree and component structure

DATE-ISSUED: May 11, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|-------------------|-------|----------|---------|
| Orr; Michael B. | Bainbridge Island | WA | N/A | N/A |
| Everett; Nathan W. | Bellevue | WA | N/A | N/A |
| Gardner; Gay Linda | Auburn | WA | N/A | N/A |
| King; Joseph D. | Seattle | WA | N/A | N/A |
| McDonald; Marc B. | Mercer Island | WA | N/A | N/A |
| von Limbach; Geoffrey | Seattle | WA | N/A | N/A |
| Weil; Steven E. | Bellevue | WA | N/A | N/A |

US-CL-CURRENT: 707/517

ABSTRACT:

One aspect of the present invention provides for a three-way separation of the information in a document. In a particular embodiment, the document is separated into its content, design and media aspects. In one embodiment, an information data structure is provided that includes three tree structures. A design tree structure represents the design of a composition and includes design components. A content tree structure represents the content of the composition and includes content elements. A media tree structure represents the selected medium of the composition and includes media components. The content and media tree structures are linked to the design tree structure. The design tree structure, the content tree structure and the media tree structure are unique but utilize at least some common components from one another. A component data structure represents a content element within a composition. The component includes a content facet, a design facet and a media facet. The content facet includes content properties related to the content element. A design facet includes a design parent pointer to a parent design component and design properties. A media facet includes a media parent pointer to a parent media component and region properties indicating a region occupied by the content element within the composition. A media division data structure is associated with a parent component in a media tree structure of a composition. The parent component has a parent region in a medium and has child components. Each child component is associated with a child region of the medium. The media division data structure includes a link to the parent component, an indicator of the number of child components, an orientation flag and a fit value expressing a relationship between the child regions and the parent region.

37 Claims, 71 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 47

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|

☐ 13. Document ID: US 5895476 A

L6: Entry 13 of 24

File: USPT

Apr 20, 1999

US-PAT-NO: 5895476

DOCUMENT-IDENTIFIER: US 5895476 A

TITLE: Design engine for automatic reformatting for design and media

DATE-ISSUED: April 20, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------------|-------------------|-------|----------|---------|
| Orr; Michael B. | Bainbridge Island | WA | N/A | N/A |
| Brintzenhofe; Keith S. | Bainbridge Island | WA | N/A | N/A |
| King; Joseph D. | Seattle | WA | N/A | N/A |
| McDonald; Marc B. | Mercer Island | WA | N/A | N/A |
| von Limbach; Geoffrey | Seattle | WA | N/A | N/A |
| Weil; Steven E. | Bellevue | WA | N/A | N/A |

US-CL-CURRENT: 707/517

ABSTRACT:

A three-way separation of information in a document includes content, design and media aspects. This division supports automatic rendering to multiple forms of media such as print, Intranet, Internet, and OLE embedding. A method changes the design of a composition having a current design that is rendered in a particular medium. The composition is represented by components in a current design tree and includes content elements associated with the components. A new design tree is created for the composition based upon a new design and new design components. Next, each of the content elements are linked into an association with one of the new design components such that the set of relationships between the content elements in the context of the new design are maintained. Media layout values are calculated for each content element of the composition. The content elements are laid out in the new design and the new design retains the composition rendered in the particular medium. Another method changes the medium of a composition having a current design. A new media tree is created for the composition that is representative of a new medium and includes media tree components. Next, each of the content elements is associated with one of the media tree components such that each of the content elements is associated with a region of the new medium. Media layout values are calculated for each content element of the composition such that each of the media layout values for each content element defines one of the regions of the new medium.

26 Claims, 70 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 47

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

☐ 14. Document ID: US 5895477 A

L6: Entry 14 of 24

File: USPT

Apr 20, 1999

US-PAT-NO: 5895477

DOCUMENT-IDENTIFIER: US 5895477 A

TITLE: Design engine for automatic layout of content

DATE-ISSUED: April 20, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------------|-------------------|-------|----------|---------|
| Orr; Michael B. | Bainbridge Island | WA | N/A | N/A |
| Brintzenhofe; Keith S. | Bainbridge Island | WA | N/A | N/A |
| King; Joseph D. | Seattle | WA | N/A | N/A |
| McDonald; Marc B. | Mercer Island | WA | N/A | N/A |
| von Limbach; Geoffrey | Seattle | WA | N/A | N/A |
| Weil; Steven E. | Bellevue | WA | N/A | N/A |

US-CL-CURRENT: 707/517

ABSTRACT:

A three-way separation of information in a document includes content, design and media aspects. This division supports automatic rendering to multiple forms of media such as print, Intranet, Internet, and OLE embedding. A method adds content to a composition having a chosen design and automatically calculates a layout for the composition. A content object is dropped upon a receiving component of the composition. The dropped content object has at least one potential type. A potential type of the content object is matched with a compatible type of the receiving component. Next, the design tree is modified to incorporate the content object, and media layout values are calculated for each content element of the composition. The dropped content may change the existing content, may replace it completely, may be inserted into the existing content, may change its properties, or may result in new components being created in the design tree. If content is dropped in an incorrect location, a tree structure is used to determine where to place the content automatically. A content drop table data structure is used to assist in dropping content onto a composition. When a content object having potential dropped content types is dropped upon a component of the composition, a matching subcomponent type may be determined by reference to the content drop table.

20 Claims, 71 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 47

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|--------------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Drawing Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|--------------|-------|

☐ 15. Document ID: US 5886902 A

L6: Entry 15 of 24

File: USPT

Mar 23, 1999

US-PAT-NO: 5886902

DOCUMENT-IDENTIFIER: US 5886902 A

TITLE: Method for optimizing items represented in permutation spaces

DATE-ISSUED: March 23, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------|-----------|-------|----------|---------|
| Turrini, Silvio | Palo Alto | CA | N/A | N/A |

US-CL-CURRENT: 703/2; 345/154, 345/427, 382/276, 382/277, 382/280, 708/400, 708/401, 708/402, 708/520, 708/607

ABSTRACT:

In a computer implemented method, possible arrangements of items, such as components to be placed on a semiconductor die, are described in a permutation space expressed as a data structure stored in a memory. The data structure is in the form of a balanced tree. In the tree, each node is a possible permutation. The ordering in the permutation space is transformed to an ordering described in a vector space using an inversion table. A best ordering of items is determined in the vector space according to a predetermined criterion such as an objective function. The best ordering as determined in vector space is then transformed back to the permutation space to determine an optimal placement of the item according to the predetermined criterion.

12 Claims, 17 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 12

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

☐ 16. Document ID: US 5835087 A

L6: Entry 16 of 24

File: USPT

Nov 10, 1998

US-PAT-NO: 5835087

DOCUMENT-IDENTIFIER: US 5835087 A

TITLE: System for generation of object profiles for a system for customized electronic identification of desirable objects

DATE-ISSUED: November 10, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|--------------|-------|----------|---------|
| Herz; Frederick S. M. | Davis | WV | 26260 | N/A |
| Eisner; Jason M. | Philadelphia | PA | 19107 | N/A |
| Ungar; Lyle H. | Philadelphia | PA | 19103 | N/A |

US-CL-CURRENT: 345/327; 348/1, 348/10, 348/12, 348/13, 348/7, 455/2, 455/4.2, 455/5.1

ABSTRACT:

This invention relates to customized electronic identification of desirable objects, such as news articles, in an electronic media environment, and in particular to a system that automatically constructs both a "target profile" for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a "target profile interest summary" for each user, which target profile interest summary describes the user's interest level in various types of target objects. The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user so that the user can select from among these potentially relevant target objects, which were automatically selected by this system from the plethora of target objects that are profiled on the electronic media. Users' target profile interest summaries can be used to efficiently organize the distribution of information in a large scale system consisting of many users interconnected by means of a communication network. Additionally, a cryptographically-based pseudonym proxy server is provided to ensure the privacy of a user's target profile interest summary, by giving the user control over the ability of third parties to access this summary and to identify or contact the user.

24 Claims, 17 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 13

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWNC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

☐ 17. Document ID: US 5805795 A

L6: Entry 17 of 24

File: USPT

Sep 8, 1998

US-PAT-NO: 5805795
DOCUMENT-IDENTIFIER: US 5805795 A

TITLE: Method and computer program product for generating a computer program product test that includes an optimized set of computer program product test cases, and method for selecting same

DATE-ISSUED: September 8, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|--------------------|------------------|-------|----------|---------|
| Whitten; Thomas G. | Colorado Springs | CO | N/A | N/A |

US-CL-CURRENT: 714/38; 714/32

ABSTRACT:

A method for selecting a set of test cases which may be used to test a software program product is disclosed. The program to be tested may have a number of code blocks that may be exercised during execution of the program. The method includes identifying each of the code blocks that may be exercised, and determining a time for executing each of the test cases in the set. A set of the test cases is then selected that exercises a maximum number of the identified code blocks that can be exercised in a minimum time. The selection step may be performed by executing a genetic algorithm for determining which subset of test cases to use, using a combination of time and coverage as a fitness value.

3 Claims, 5 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 3

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw. Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|------------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|------------|-------|

☐ 18. Document ID: US 5777948 A

L6: Entry 18 of 24

File: USPT

Jul 7, 1998

US-PAT-NO: 5777948

DOCUMENT-IDENTIFIER: US 5777948 A

TITLE: Method and apparatus for preforming mutations in a genetic algorithm-based underwater target tracking system

DATE-ISSUED: July 7, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|------------|-------|----------|---------|
| Ferkinhoff; David J. | Middletown | RI | N/A | N/A |
| Baylog; John G. | Tiverton | RI | N/A | N/A |

US-CL-CURRENT: 367/131; 367/124, 709/224

ABSTRACT:

A method for performing mutations in a genetic algorithm-based underwater acoustic contact tracking system includes the steps of: (i) providing an initially ordered list of bit numbers; (ii) selecting a random number from a uniform distribution of numbers; (iii) performing an inverse mapping of the selected random number via a binomial distribution, to determine a number of bits to mutate; (iv) determining if mutation is to be performed; (v) selecting particular bits to mutate; (vi) complementing selected bits; and (vii) outputting mutated contact state variables. The invention further contemplates a system for performing the above method.

10 Claims, 5 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 5

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KOMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

☐ 19. Document ID: US 5754938 A

L6: Entry 19 of 24

File: USPT

May 19, 1998

US-PAT-NO: 5754938
DOCUMENT-IDENTIFIER: US 5754938 A

TITLE: Pseudonymous server for system for customized electronic identification of desirable objects

DATE-ISSUED: May 19, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|--------------|-------|----------|---------|
| Herz; Frederick S. M. | Davis | WV | 26260 | N/A |
| Eisner; Jason M. | Philadelphia | PA | 19107 | N/A |
| Salganicoff; Marcos | Philadelphia | PA | 19130 | N/A |

US-CL-CURRENT: 455/4.2; 348/12, 348/2, 348/5.5, 348/7, 455/5.1, 705/74, 707/6, 707/9, 709/219, 713/155

ABSTRACT:

This invention relates to customized electronic identification of desirable objects, such as news articles, in an electronic media environment, and in particular to a system that automatically constructs both a "target profile" for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a "target profile interest summary" for each user, which target profile interest summary describes the user's interest level in various types of target objects. The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user so that the user can select from among these potentially relevant target objects, which were automatically selected by this system from the plethora of target objects that are profiled on the electronic media. Users' target profile interest summaries can be used to efficiently organize the distribution of information in a large scale system consisting of many users interconnected by means of a communication network.. Additionally, a cryptographically-based pseudonym proxy server is provided to ensure the privacy of a user's target profile interest summary, by giving the user control over the ability of third parties to access this summary and to identify or contact the user.

36 Claims, 17 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 13

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|

☐ 20. Document ID: US 5754939 A

L6: Entry 20 of 24

File: USPT

May 19, 1998

US-PAT-NO: 5754939

DOCUMENT-IDENTIFIER: US 5754939 A

TITLE: System for generation of user profiles for a system for customized electronic identification of desirable objects

DATE-ISSUED: May 19, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|--------------|-------|----------|---------|
| Herz; Frederick S. M. | Davis | WV | 26260 | N/A |
| Eisner; Jason M. | Philadelphia | PA | 19107 | N/A |
| Ungar; Lyle H. | Philadelphia | PA | 19103 | N/A |
| Marcus; Mitchell P. | Philadelphia | PA | 19119 | N/A |

US-CL-CURRENT: 455/4.2; 348/10, 348/12, 348/2, 348/7, 455/5.1, 707/501, 709/219

ABSTRACT:

This invention relates to customized electronic identification of desirable objects, such as news articles, in an electronic media environment, and in particular to a system that automatically constructs both a "target profile" for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a "target profile interest summary" for each user, which target profile interest summary describes the user's interest level in various types of target objects. The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user so that the user can select from among these potentially relevant target objects, which were automatically selected by this system from the plethora of target objects that are profiled on the electronic media. Users' target profile interest summaries can be used to efficiently organize the distribution of information in a large scale system consisting of many users interconnected by means of a communication network. Additionally, a cryptographically-based pseudonym proxy server is provided to ensure the privacy of a user's target profile interest summary, by giving the user control over the ability of third parties to access this summary and to identify or contact the user.

22 Claims, 17 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 13

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

Generate Collection

| Terms | Documents |
|-------|-----------|
| 13 | 24 |

Display

10

Documents, starting with Document:

21

Display Format: REV

Change Format

WEST**Generate Collection****Search Results - Record(s) 21 through 24 of 24 returned.**☐ **21. Document ID: US 5717787 A**

L6: Entry 21 of 24

File: USPT

Feb 10, 1998

US-PAT-NO: 5717787

DOCUMENT-IDENTIFIER: US 5717787 A

TITLE: Method for data compression by associating complex numbers with files of data values

DATE-ISSUED: February 10, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|-----------|-------|----------|---------|
| Feo; John Thomas | Dublin | CA | N/A | N/A |
| Hanks; David Carlton | San Ramon | CA | N/A | N/A |
| Kraay; Thomas Arthur | Leeburg | VA | N/A | N/A |

US-CL-CURRENT: 382/232; 382/249, 706/13

ABSTRACT:

A method for compressing data for storage or transmission. Given a complex polynomial and a value assigned to each root, a root generated data file (RGDF) is created, one entry at a time. Each entry is mapped to a point in a complex plane. An iterative root finding technique is used to map the coordinates of the point to the coordinates of one of the roots of the polynomial. The value associated with that root is assigned to the entry. An equational data compression (EDC) method reverses this procedure. Given a target data file, the EDC method uses a search algorithm to calculate a set of m complex numbers and a value map that will generate the target data file. The error between a simple target data file and generated data file is typically less than 10%. Data files can be transmitted or stored without loss by transmitting the m complex numbers, their associated values, and an error file whose size is at most one-tenth of the size of the input data file.

3 Claims, 4 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 3

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMCC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

☐ **22. Document ID: US 5699268 A**

L6: Entry 22 of 24

File: USPT

Dec 16, 1997

US-PAT-NO: 5699268
DOCUMENT-IDENTIFIER: US 5699268 A

TITLE: Computational method for designing chemical structures having common functional characteristics

DATE-ISSUED: December 16, 1997

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|-------|-------|----------|---------|
| Schmidt; Jonathan M. | Elora | N/A | N/A | CAX |

US-CL-CURRENT: 702/27; 703/11, 703/2

ABSTRACT:

The present invention relates to computational methods for designing chemical structures sharing common useful, functional properties based on specific combinations of steric configuration and binding affinity. More particularly the present invention provides a method for producing computer-simulated receptors which functionally mimic biological receptors. The simulated receptors are designed to exhibit optimized selective affinity for known target molecules. Chemical structures are then generated and evolved to exhibit selective affinity for the simulated receptors.

52 Claims, 6 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 4

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | RWC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|

☐ 23. Document ID: US 5048095 A

L6: Entry 23 of 24

File: USPT

Sep 10, 1991

US-PAT-NO: 5048095
DOCUMENT-IDENTIFIER: US 5048095 A

TITLE: Adaptive image segmentation system

DATE-ISSUED: September 10, 1991

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------|--------------|-------|----------|---------|
| Bhanu; Bir | New Brighton | MN | N/A | N/A |
| Lee; Sungkee | St. Paul | MN | N/A | N/A |
| Ming; John C. | Coon Rapids | MN | N/A | N/A |

US-CL-CURRENT: 382/173; 382/155, 706/13

ABSTRACT:

An adaptive segmentation system that utilizes a genetic algorithm in image segmentation. The system incorporates a closed-loop feedback mechanism in the segmentation/learning cycle. The system can adapt to changes appearing in the images being segmented, caused by variations of such factors as time and weather. Adaptation is achieved with a measure based on differences of analyzed past imagery and current imagery and on the criteria for segmentation quality. The invention is not dependent on any particular segmentation algorithm or specific sensor type.

8 Claims, 19 Drawing figures Exemplary Claim Number: 1
Number of Drawing Sheets: 9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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☐ 24. Document ID: US 4821333 A

L6: Entry 24 of 24

File: USPT

Apr 11, 1989

US-PAT-NO: 4821333

DOCUMENT-IDENTIFIER: US 4821333 A

TITLE: Machine learning procedures for generating image domain feature detector structuring elements

DATE-ISSUED: April 11, 1989

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|--------------------|-----------|-------|----------|---------|
| Gillies; Andrew M. | Ann Arbor | MI | N/A | N/A |

US-CL-CURRENT: 382/308; 382/257, 382/302, 706/13

ABSTRACT:

A method for generating a program to be used in two-class or multi-class image domain feature discrimination problems. A feature discrimination problem is solved by a serial neighborhood processor which is programmed to perform a series of mathematical morphological transformations as specified by structuring elements and morphological operations. The morphological operations are expressed in a program form typically developed by an experienced human, while the sequence of structuring elements used with the program form are generated by an algorithm which iteratively tests and scores the performance of various sequences of transformations, each sequence of transformations being representable by a binary sequence which is allowed to evolve by the processes of mutation and cross-linking. Acceptable forms of binary digit sequences are also disclosed.

41 Claims, 25 Drawing figures Exemplary Claim Number: 1

Number of Drawing Sheets: 9

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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